ABSTRACT OF THE DISCLOSURE

Various embodiments of a scalable routing system for use in an interconnection fabric are disclosed. In this routing scheme, a routing directive describes a route in the interconnection fabric between a sending node and a destination node. Either the sending node or a sending device connected to the sending node encodes the routing directive in a message to be sent to the destination node. The routing directive may include a variable number of segments. Each segment includes a distance component and a direction component that tell each node along the route how it should send the message. Generally, each distance component describes a distance in the interconnection fabric while each direction component specifies a direction in the interconnection fabric.